



040 M-E 04-22-02 0300 #3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Edward L. Simonds

SERIAL NO.: 10/085,969

FILED: February 28, 2002

TITLE: FLUID PRESSURE REGULATOR

Assistant Commissioner for Patents
Washington, D.C. 20231

AFFIDAVIT UNDER 37 CFR 1.98(a)(3)

The undersigned states that the prior art patents submitted with the Information Disclosure Statement attached hereto may have relevance as it concerns the above patent application. This relevance, as presently understood by the undersigned is as follows:

JA 61-83492(A), Hiramatsu. A ring 53, being a push-up member, is mounted to the bottom of a vane containing groove 50 on one end surface site of an inner rotor 30, and the bottom surface of a vane 44 is adapted to make slide contact with the ring 53 when the forward end of the vane 55 makes slide contact with the inner peripheral surface of a cam ring 29 at the small part of the cam ring 29. This prevents the vane 44 from being moved further to the inner peripheral side of the inner rotor 30. Thus, even if a pressure difference between the forward end and the bottom part of the vane 44 is produced at the small part of the cam ring

CERTIFICATE OF MAILING

I hereby certify that this Affidavit is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on this 12 day of April, 2002, with adequate postage affixed thereto.

29, since the vane 44 makes contact with the ring 53 and is prevented from being further moved to the inner side of the containing groove 50, the forward end of the vane 44 is always brought into slide contact with the inner peripheral surface, and eliminates a fear of an oil pressure being escaped due to formation of a gap. This enables stable provision of desired torque, and improves reliability of a pump.

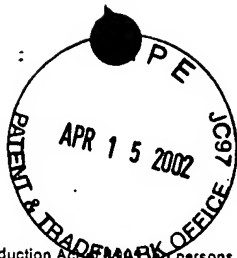
JA 01-290924(A), Hosoyama. A guide body (g) is fixed inside a casing C and the interval between the outer peripheral edge of the guide body (g) and the inner peripheral edge (i) of the casing C is equalized. A circular rotor R and an output shaft 13 are fixed on one axis. Blades 14 provided on the rotor R are brought into contact slidingly with the inner peripheral edge (i) of the casing. Thereby, the balance of the whole engine can be kept reducing vibration.

DT 2029 280, Offenlegungsschrift. Consists of a casing with an internal cylindrical chamber, a rotor operating in this, with sliding vanes, and with casing end covers with inlet and discharge openings. The rotor is disposed centrally in the internal chamber which is divided by a partition vane mounted in a groove in the chamber wall. The chamber is further divided by movable vanes mounted in the rotor.

Respectfully submitted,

By 

Brett J. Trout, Reg. No. 37,250
300 S.W. 5th, Suite 222
Des Moines, IA 50309
Telephone: 280-1939
Attorney for Applicant



PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| | | | |
|-----------------------------------------------------------------------------------------------|--------|------------------------|-------------------|
| Substitute for form 1449A/PTO | | Complete if Known | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | Application Number | 10/085,969 |
| | | Filing Date | February 28, 2002 |
| | | First Named Inventor | Edward L. Simonds |
| | | Art Unit | |
| | | Examiner Name | |
| Sheet | 1 of 2 | Attorney Docket Number | |

| U.S. PATENT DOCUMENTS | | | | | |
|-----------------------|--------------------------|--------------------------------------------|--------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|
| Examiner Initials | Cite No. ¹ | Document Number | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number - Kind Code ² (if known) | | | |
| | | us-5,030,074 | 7/9/91 | Sakamaki et al | |
| | | us-3,988,083 | 10/26/76 | Shimizu et al | |
| | | us-4,998,868 | 3/12/91 | Sakamaki et al | |
| | | us-2,636,480 | 4/28/53 | Becker | |
| | | us-5,011,390 | 4/30/91 | Sakamaki et al | |
| | | us-5,002,473 | 3/26/91 | Sakamaki et al | |
| | | us-6,024,549 | 2/15/00 | Lee | |
| | | us-5,816,789 | 10/6/98 | Johnson | |
| | | us-5,961,310 | 10/5/99 | McClure | |
| | | us-5,551,854 | 9/3/96 | Edwards | |
| | | us-1,492,456 | 4/12/23 | Hansen-Ellehammer | |
| | | us-3,804,562 | 4/16/74 | Hansson | |
| | | us-4,789,317 | 12/6/88 | Waser et al | |
| | | us-5,533,566 | 7/9/96 | Fineblum | |
| | | us-5,284,427 | 2/8/94 | Wacker | |
| | | us-2,671,411 | 3/9/54 | Rhine | |
| | | us-5,967,016 | 10/19/99 | Simonds | |
| | | us-5,974,943 | 11/2/99 | Simonds | |
| | | us-4,712,789 | 12/87 | Brilando | |
| | | us-4,757,988 | 07/88 | Szymiski | |

| FOREIGN PATENT DOCUMENTS | | | | | |
|--------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|
| Examiner Initials | Cite No. ¹ | Foreign Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Country Code ³ - Number ⁴ - Kind Code ⁵ (if known) | | | |
| | | JA 61-83492 (A) | 9/29/84 | Hiramatsu | |
| | | JA 01-290924 (A) | 5/18/88 | Hosoyama | |
| | | DT 2029 280 | 6/13/70 | Offenlegungsschrift | |
| | | WO 82/01215 | 4/15/82 | Richter, Hans | |
| | | GB 392,999 | 6/1/33 | Warren, et al | |

| | |
|-----------------------|--------------------|
| Examiner Signature | Date Considered |
|-----------------------|--------------------|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------|-------------------|------------------------|--|
| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | Complete If Known | | | |
| | | Application Number | 10/085,969 | | |
| | | Filing Date | February 28, 2002 | | |
| | | First Named Inventor | Edward L. Simonds | | |
| | | Art Unit | | | |
| | | Examiner Name | | | |
| Sheet | 2 | of | 2 | Attorney Docket Number | |

| U.S. PATENT DOCUMENTS | | | | | |
|-----------------------------------|--------------------------|--------------------------------------------|--------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|
| Examiner Initials ² | Cite No. ¹ | Document Number | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number - Kind Code ³ (if known) | | | |
| | | us-4,902,001 | 2/90 | Balbo | |
| | | us-5,461,863 | 10/95 | Simonds | |
| | | us-5,617,936 | 4/97 | Nemoto | |
| | | us-6,203,041 | 3/01 | Helm | |
| | | us-4,898,524 | 2/90 | Butzen | |
| | | us-3,938,426 | 2/17/76 | Hunter | |
| | | us-1,115,470 | 10/1914 | Lipman | |
| | | us-4,986,402 | 1/91 | Neuwirth | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |
| | | US- | | | |

| FOREIGN PATENT DOCUMENTS | | | | | | |
|-----------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|----------------|
| Examiner Initials ² | Cite No. ¹ | Foreign Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ⁶ |
| | | Country Code ³ - Number ⁴ - Kind Code ⁵ (if known) | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| | |
|-----------------------|--------------------|
| Examiner Signature | Date Considered |
|-----------------------|--------------------|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.